

STATEMENT OF THE CLAIMS

1-40 (canceled)

41. (currently amended) A method for producing oriented plastic tube, the method comprising:

performing a continuous sequence using a variable diameter calibrator upstream of a diametrical expansion apparatus, the sequence including

(i) setting the variable diameter calibrator in order to continuously produce ~~extruding~~ a tube having ~~to~~ a start-up inner diameter and a start-up outer diameter selected to facilitate passage of the tube over the ~~[[a]]~~ diametrical expansion apparatus;

(ii) passing the tube of (i) over the diametrical expansion apparatus;

(iii) adjusting the variable diameter calibrator in order to continuously produce a tube having the start-up outer diameter of the extruded tube of (i) to a first adjusted outer diameter less than the start-up outer diameter, the first adjusted outer diameter selected to facilitate passage of the tube over the diametrical expansion apparatus for diametrical expansion of the tube;

(iv) temperature conditioning the tube of first adjusted outer diameter;

(v) using the diametrical expansion apparatus to diametrically expand ~~expanding~~ the tube of (iv) into an oriented tube having a second outer diameter larger than the first adjusted outer diameter; and

(vi) cooling the oriented tube of (v),

wherein the variable diameter calibrator is adjusted to actively vary the first adjusted outer diameter ~~is actively varied in order~~ to control circumferential draw of the oriented tube of v) during performance of the continuous sequence without stopping continuous production ~~extrusion~~ of the tube.

42. (previously presented) A method according to claim 41, wherein:

the diametrical expansion apparatus includes an expandable plug, and diametrically expanding the tube in (v) includes applying an internal pressure to the tube within an expansion zone at a downstream end of the tube with the expandable plug and limiting and maintaining pressure within the expansion zone with the expandable plug, and

wherein the expandable plug is in an unexpanded state during initial passage of the tube over the diametrical expansion apparatus in (ii).

43 - 46 (cancelled)

47. (currently amended) A method according to claim 41, wherein:

~~a solid mandrel disposed within the diametrical expansion apparatus~~ includes a solid mandrel that diametrically expands ~~is utilized to diametrically expand~~ the tube in (v).

48. (currently amended) A method of producing oriented plastic tube, the method comprising:

performing a continuous sequence using a variable diameter calibrator upstream of a diametrical expansion apparatus, the sequence including

- (i) continuously producing ~~extruding~~ a tube, the tube having an initial outer diameter;
- (ii) using the variable diameter calibrator to adjust ~~adjusting~~ the initial outer diameter of the tube of (i) to a first adjusted outer diameter;
- (iii) temperature conditioning the tube of first adjusted outer diameter;

(iv) using the diametrical expansion apparatus to diametrically expand ~~expanding~~ the tube of (iii) into an oriented tube having a second outer diameter larger than the first adjusted outer diameter; and

(v) cooling the oriented tube of (iv),

wherein the variable diameter calibrator is adjusted to actively vary the first adjusted outer diameter in order ~~is actively varied~~ to control circumferential draw of the oriented tube during performance of the continuous sequence without stopping continuous production ~~extrusion~~ of the tube.

49. (cancelled)

50. (currently amended) A method according to claim 48, wherein:

the variable diameter calibrator and the diametrical expansion apparatus are adapted such that the first adjusted outer diameter and the second outer diameter are both actively increased during performance of the continuous sequence without changing circumferential draw of the oriented tube.

51 - 52 (cancelled)

53. (currently amended) A method according to claim 48, wherein:

the variable diameter calibrator and the diametrical expansion apparatus are adapted such that the first adjusted outer diameter and the second outer diameter are both actively decreased during performance of the continuous sequence without changing circumferential draw of the oriented tube.

54 - 55 (cancelled)

56. (currently amended) A method according to claim 48, wherein:

the oriented ~~plastic~~ tube of (v) has a wall thickness, and the variable diameter calibrator and the diametrical expansion apparatus are adapted such that the wall thickness is adjusted during the continuous sequence without changing circumferential draw of the oriented tube.

57. (currently amended) A method according to claim 56, wherein:

the wall thickness is adjusted by varying a downstream haul-off speed of the oriented ~~plastic~~ tube.

58. (currently amended) A method according to claim 57, wherein:

axial draw of the oriented tube is varied by actively varying a ratio of the downstream haul-off speed of the oriented ~~plastic~~ tube to an upstream haul-off speed of the tube.

59. (currently amended) A method according to claim 48, wherein:

circumferential draw of the oriented tube is increased by adjusting the variable diameter calibrator to actively decrease ~~decreasing~~ the first adjusted outer diameter without increasing the second outer diameter as dictated by the diametrical expansion apparatus during performance of the continuous sequence and without stopping continuous production ~~extrusion~~ of the tube.

60. (currently amended) A method according to claim 48, wherein:

circumferential draw of the oriented tube is decreased by adjusting the variable diameter calibrator to actively increase the first adjusted outer diameter is actively increased without increasing the second outer diameter as dictated by the diametrical expansion apparatus during performance of the continuous sequence and without stopping continuous production of the tube to decrease circumferential draw of the oriented tube.

61. (currently amended) A method ~~continuous process~~ according to claim 48, wherein:

diametrically expanding the tube in (iv) includes applying an internal pressure to the tube within an expansion zone at a downstream end of the tube.

62. (currently amended) A method ~~continuous process~~ according to claim 48, wherein:

the diametrical expansion apparatus includes a solid mandrel that diametrically expands  
~~disposed within a diametrical expansion apparatus is utilized to diametrically expand the tube in~~  
(iv).

63. (cancelled)

64. (new) A method according to claim 48, wherein:

the diametrical expansion apparatus includes a replaceable plug that diametrically expands the tube in (iv).

65. (new) A method according to claim 41, wherein:

the diametrically expansion apparatus includes a replaceable plug that diametrically expands the tube in (v).

66. (new) A method according to claim 41, wherein:

in ii), the tube passes over the diametrical expansion apparatus without substantial diametrical expansion relative to v).

67. (new) A method according to claim 41, wherein:

in ii), the tube passes over the diametrical expansion apparatus with substantially no frictional engagement with the diametrical expansion apparatus.